

# Carbon emissions 2021/22

Total emissions have increase by 62,090 tCO<sub>2</sub>e compared with 2020/21.

This is due to the increase in our service provision following lifting of COVID-19 restrictions and increased expenditure as we progress with the transformation of the Core Valley Lines

## Our carbon footprint 2021/22

### Scope 1

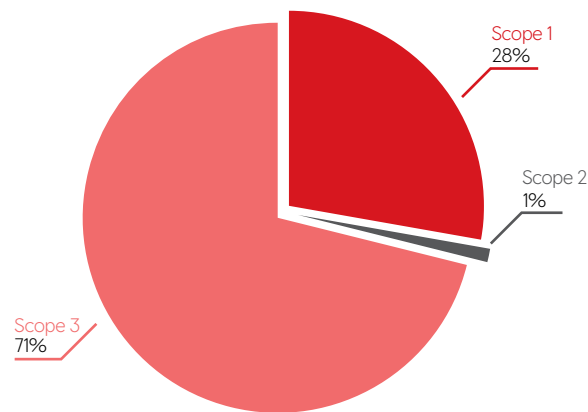
Direct emissions resulting from operations and activities that TfW owns or controls.

### Scope 2

Indirect emissions from grid-supplied energy

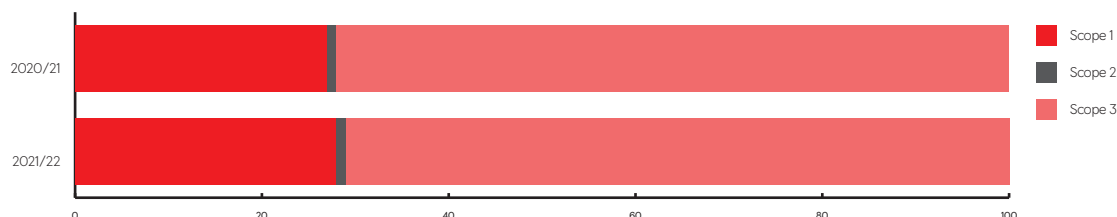
### Scope 3

Indirect emissions resulting from activities related to TfW operations, but not within our direct control



## Changes in 2021/22

- Increased services as Covid-19 restrictions have ended resulted in an increase in our direct emissions (Scope 1)
- Our Scope 2 electricity consumption has increased by 89 tCO<sub>2</sub>e. Again, this is likely due to increased services operating from our stations
- Commuting emissions were previously unreported in 2020/21, due to absence of activity data. We performed a travel survey to obtain an estimate of commuting patterns for 2021/22. 178 colleagues completed the survey which represents 25% of the total workforce in 2021/22. From the results, we estimated the total commuting distances for the total staff headcount, as per Welsh Government's reporting methodology = 144 tCO<sub>2</sub>e commuting emissions and 40 tCO<sub>2</sub>e upstream commuting emission losses.



## Emissions breakdown

Emitting activity	tCO <sub>2</sub> e
<b>Scope 1 (direct emissions)</b>	
Gas	584
Fuels	84,571
<b>Scope 2 (indirect emissions from grid-supplied energy)</b>	
Electricity	2,736
<b>Scope 3 (other indirect emissions)</b>	
Gas upstream losses	100
Fuel upstream losses	19,393
Waste and recycling	19
Water supply	12
Water treatment	21
Supply chain	196,879
Electricity upstream losses	1,018
Renewable energy generation	0
Business mileage	25
Business mileage (upstream losses)	7
Commuting	144
Commuting mileage (upstream losses)	40
<b>Land use emissions</b>	
Net use emissions from TfW land assets	-702
<b>Total 2020/21 emissions</b>	<b>304,846</b>

## Where we're improving

- ☑ Scope 1 gas emissions have **reduced by 23 tCO<sub>2</sub>e** compared to 2020/21 due to efficiencies across our estate
- ☑ Our scope 3 water supply emissions have **reduced by 9 tCO<sub>2</sub>e** and water treatment emissions have **halved** when compared with 2020/21
- ☑ Our estate is estimated to **sequester 702 tCO<sub>2</sub>e**. This has increased by -13 tCO<sub>2</sub>e, which is largely due to an increase in our estate by 176.4ha.

## Improving our processes

Business travel emissions have been estimated based on claims submitted by staff for reimbursement of expenses incurred whilst travelling on business. Enhanced reporting of business travel emissions requires granular underlying data about the specific transport mode and fuel (eg. car and fuel types). We were not able to obtain this data for this report.

The Tier 2 accounting method was applied to obtain a crude estimate of business travel emissions based on  
a) average car and unknown fuel type for private vehicles and,  
b) £ claimed/km for public transport.

Processes are being developed to enable more robust reporting of business travel emissions for the next reporting year.

Employee commuting emissions are a high level estimate based on the likely commuting patterns, if not working from home. During 2021/22, a large amount of surveyed staff worked from home during different periods due to COVID-19 restrictions, therefore the data is likely to suffer from sampling bias. The travel data was obtained by a staff travel survey, where staff answered questions about their travel to work patterns based on the previous week. 25% of TfW staff completed the survey and, to estimate the emissions, a multiplier was applied to establish a high-level, indicative estimate of the likely emissions produced by total employee commuting during an average working year.